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On the occurrence in Acre of four poorly-known bird species in southwestern Brazilian Amazon

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Abstract

The geographical ranges of many bird species are neither uniform nor continuous. Species that are common in some regions may be rare in others, or their status of occurrence may be uncertain. Here, we present the first documented record of Azure Gallinule (*Porphyrio flavirostris*) as well as details and discussion on the distribution and status of previous records of the Least Bittern (*Ixobrychus exilis*), Paint-billed Crake (*Neocrex erythrops*), and Plain-breasted Ground-dove (*Columbina minuta*) in the Brazilian state of Acre. While all these species have relatively wide ranges, little is known of their distribution in the southwestern Amazon basin.

Key words

Aves; *Ixobrychus exilis*; *Neocrex erythrops*; *Porphyrio flavirostris*; *Columbina minuta*; range extensions.

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Introduction

Understanding patterns of biodiversity and planning effective conservation measures depend on reliable data on the distribution of species (Cottee-Jones et al. 2016, Mota-Vargas and Rojas-Soto 2012). Many bird species are common in some regions, but sparsely distributed or rare in others. This may result primarily from naturally low densities in certain areas, combined with seasonal migrations and other local movements (Cottee-Jones et al. 2016). In a recent review, Guilherme (2016) listed 708 bird species with material evidence of occurrence in the Brazilian state of Acre, with an additional 22 species that require confirmation. Here, we present details and discussion on the records of four bird species in Acre, which are widely distributed in South America, but their occurrence in the southwestern Amazon basin is still uncertain.

Methods

The records reported here result from a review of the skins deposited in the ornithological collection of the Laboratory of Ornithology of the Federal University of Acre in addition to field observations by the authors between 2014 and the present. We also improved details and discussion of previous records of *Ixobrychus exilis*, *Neocrex*

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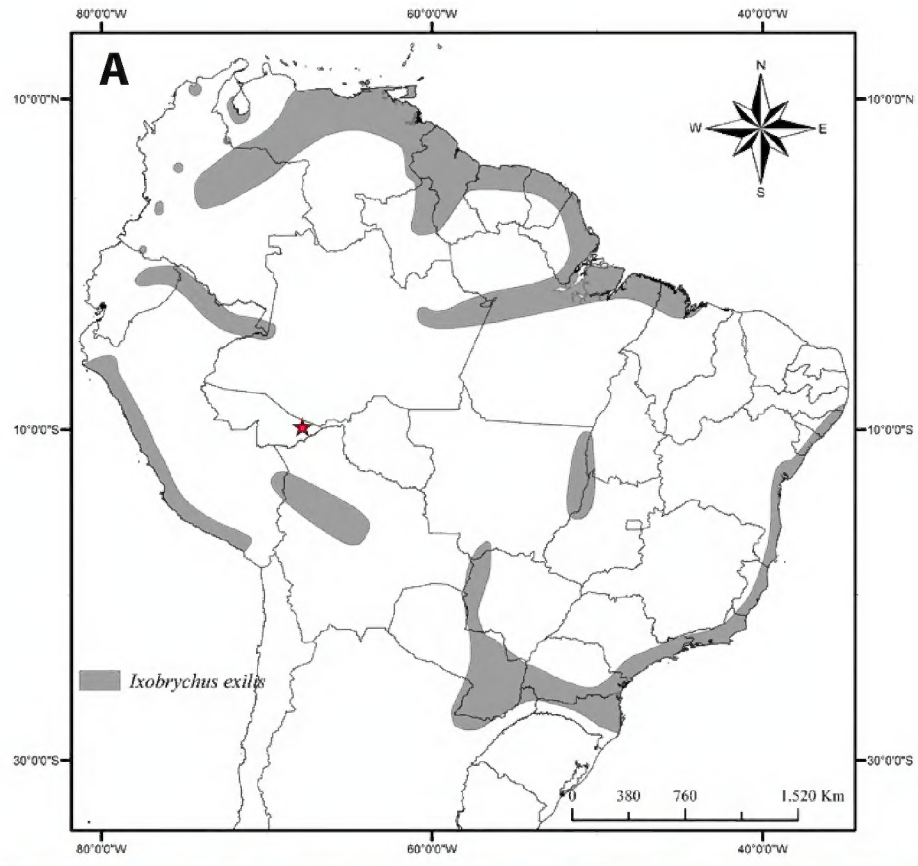

Figure 1. Least Bittern (*Ixobrychus exilis*). **A.** Range (grey) in South America. **B.** Documented record of the species presented in this study (red star). Photo by Edson Guilherme.

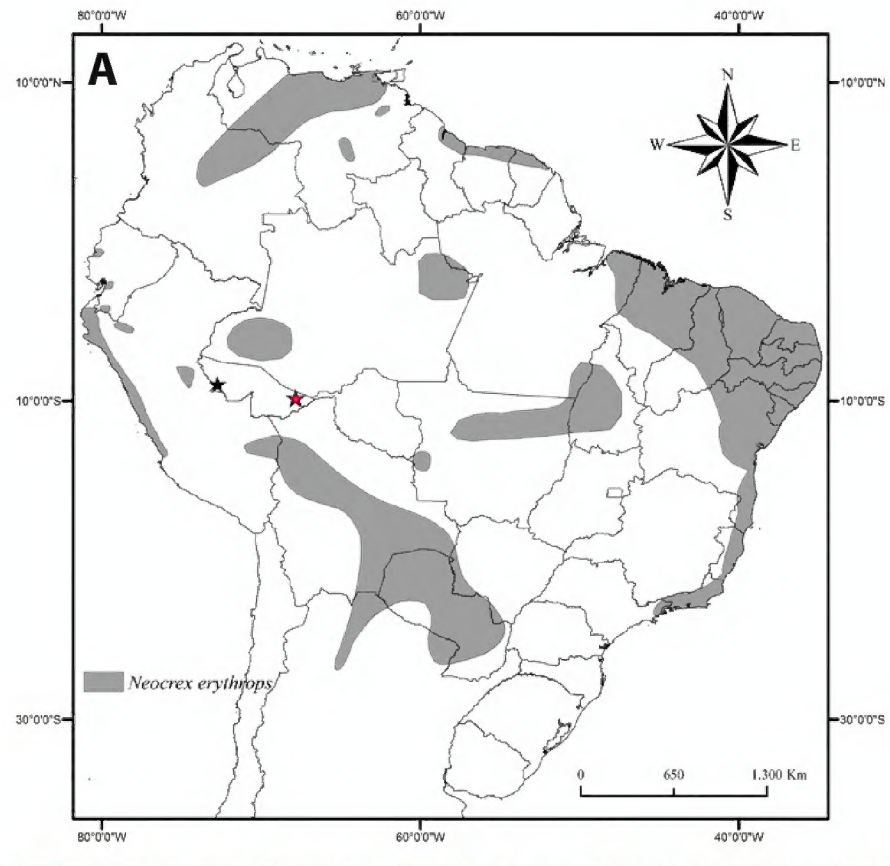

Figure 2. Paint-billed Crake (*Neocrex erythrops*). **A.** Range (grey) in South America. **B.** Documented records of the species presented in this study (red star) and by Whittaker et al. (2002) (black star). Photo by Jailini da Silva Araújo.

erythrops and *Columbina minuta* in Acre from Guilherme (2001, 2016) focusing on the diagnosis of the specimens collected, their distribution in South America and their status of occurrence in Acre. Species ranges shown in Figures 1–3 are from BirdLife International (2017).

Results

Least Bittern, *Ixobrychus exilis* (Gmelin, 1789). This species occurs from southern Canada to northern Argentina (Martínez-Vilalta and Motis 1992) with a very patchy distribution (Fig. 1A). On 1 January 2014, a Least Bittern was found on the Rio Branco campus of the Federal University of Acre (UFAC) (Fig. 1B; 09°57′29.66″ S, 067°51′56.09″). This individual died a few hours later. It was an adult female (oviduct 2 mm × 3 mm) weighing 58 g. The skin was prepared and deposited in the UFAC ornithological collection under the voucher number AC-745 (Guilherme 2016).

Paint-billed Crake, *Neocrex erythrops* (Sclater, 1867). This is a species having a wide but discontinuous range (Lopes et al. 2012, BirdLife International 2017; Fig. 2A) with scarce and widely dispersed records in the southwestern Amazon basin (Whittaker and Oren 1999, Harvey et al. 2014; Fig. 2A). In 1994, a dead individual likely killed by the traffic was found on a road in the UFAC campus in Rio Branco. As the carcass was badly damaged, it was not possible to preserve the skin. Since then, the presence of *N. erythrops* in Acre was inferred from its presence in the list of birds of the UFAC Campus and Zoobotanical Park provided by Guilherme (2001). Subsequently, Whittaker et al. (2002) reported the species for the Alto Juruá Extractive Reserve in the westernmost Acre although material evidence was provided. On 13 June 2015, a dead specimen was found in Rio Branco (09°50′13.83″ S, 067°50′28.9″ W; Fig. 2B) identified by its brown plumage from the crown to the tail; gray sides of the head, breast and belly, and flanks; undertail coverts with black and white barring; red legs and beak with red basal stripe (Restall et al. 2006; Fig. 2B). In addition, on 5 April 2017, another specimen was found dead in the

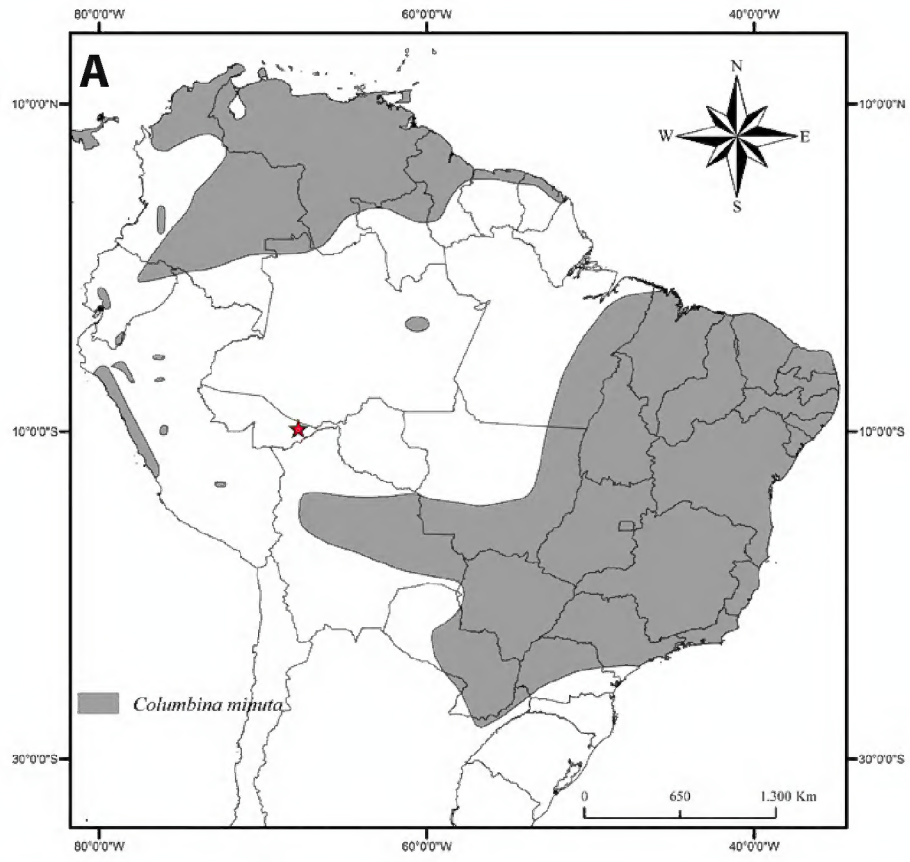

Figure 3. (A) Range (grey) of Plain-breasted Ground-Dove (*Columbina minuta*) in South America and (B) documented record of the species presented in this study (red star, voucher number AC 755) and Guilherme (2016). Photos by Edson Guilherme.

"Conjunto Universitário" neighborhood, near the Zoobotanical Park of UFAC. This specimen was taxidermized and deposited in the UFAC ornithological collection under the voucher number AC-890.

Plain-breasted Ground-Dove, *Columbina minuta* (Linnaeus, 1766). This species has a disjunct distribution in South America, in the north and in the central-eastern portion of the continent (Birdlife International 2017; Fig. 3A). There are few records of *C. minuta* in the central-western Brazilian Amazon basin, mostly from Manaus region (Omena and Cohn-Haft 2008) or nearby localities along the Madeira river basin, such as Humaitá, Apuí, and Manicoré (in the Brazilian state of Amazonas), and Porto Velho, Candeias do Jamari, Itapuã do Oeste, and Ariquemes in Rondônia (Wikiaves 2017). The species is relatively common on the northern coast of Peru and is locally abundant in elevations above 1000 m (Schulenberg et al. 2007). There are few records of *C. minuta* in the Peruvian Amazon lowland, mostly from the northeast of Peru (Schulenberg et al. 2007). On 25 March 2014, a dead adult male was encountered at the UFAC campus in Rio Branco and appears to have collided against a window. This individual was taxidermized (Fig. 3B) and deposited in UFAC ornithological collection under the voucher number AC – 755 (Guilherme 2016). Diagnostic characters of C. minuta include crown to nape grayish; back and wings brown; dark irregular spots on wings; rump to tail pale gray (Restall et al. 2006; Fig. 3B).

Azure Gallinule, *Porphyrio flavirostris* (Gmelin, 1789). This species is expected to occur in central-western South America throughout the entire Amazon basin (Remsen and Parker 1990, Lopes et al. 2012, BirdLife International 2017). Despite its wide distribution, *P. flavirostris* is locally rare, poorly known and underrepresented in scientific collections (Gyldenstolpe 1951, Parker 1982, Remsen and Parker 1990, Mallet-Rodrigues and Pacheco 2015). Despite previous records throughout Brazil (Freitas et al. 2006, Dias et al. 2010, Lopes et al. 2012, Meyer 2015), the only previous record of *P. flavirostris* from Acre is from the supplementary list of the birds of Alto Juruá Extractive Reserve (Whittaker et al. 2002; Fig. 4A). However, these authors recognize the need of confirmation by material evidence and therefore, *P. flavirostris* has remained on the secondary list of the birds of Acre to date (Guilherme 2012; 2016). When reviewing the specimens of Purple Gallinule [*Porphyrio martinicus* (Linnaeus, 1766)] in the UFAC ornithological collection, we found an adult unsexed specimen of *P. flavirostris* (Fig. 4B; voucher number AC 184) misidentified as a juvenile *P. martinicus*. This specimen was collected on 17 January 2007 on the Novo Horizonte road, in the municipality of Plácido de Castro, approximately 55 km east of the city of Rio Branco (10°08′05.87″ S, 067°19′03.16″ W; Fig. 4A). It remained unnoticed in the collection because the plumage of *P. flavirostris* adults is very similar to that of *P. martinicus* juveniles (see Remsen and Parker 1990, Schulenberg et al. 2007). In addition, on 22 and 23 December 2016, an adult *P. flavirostris* (Fig. 4C) was observed at the edge of a lake in the UFAC campus in Rio Branco. Also, on 27 December 2016, the species was recorded again at the edge of a lake on the Fazenda São Raimundo on the Panorama road, 15 km northeast of the UFAC campus (09°57′06.43″ S, 067°44′40.89″ W; Fig. 4A).

Discussion

We presented here the first record of Least Bittern to Acre, and much of the surrounding region (Fig. 1A). Due to the scarcity of records, the status of occurrence, that is, whether migrant, vagrant or resident, of this species in southwestern Amazonia is still unclear. Schulenberg et al. (2007) classified Least Bittern as an unusual resident or rare southern migrant in the southeastern Peruvian Amazon basin. In the southwestern Amazon basin, the nearest records of the Least Bittern are from Manu in Peru (Cocha Cashu), approximately 440 km southwest of Rio Branco, and the Tambopata region, 327 km from Rio

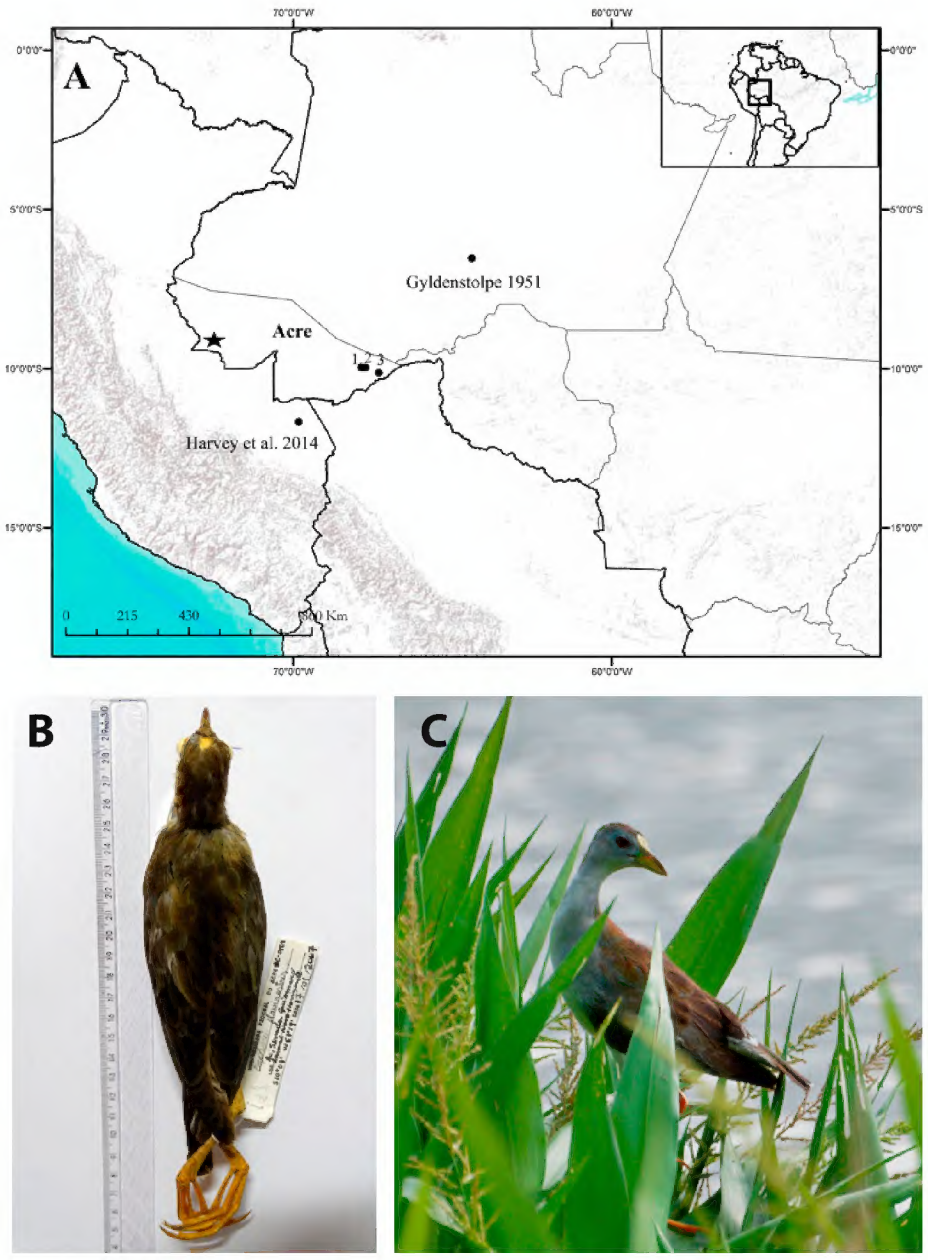

Figure 4. (A) Record of the Azure Gallinule (*Porphyrio flavirostris*) in southwestern Amazon: 1, Campus of the Federal University of Acre (UFAC) in Rio Branco; 2, São Raimundo farm; 3, Novo Horizonte road, and location of the previous undocumented record of Whittaker et al. (2002) (black star) and surrounding states (specified black dots); (B) Specimen from Novo Horizonte (voucher number AC-181) and; (C) Individual recorded on 23 December 2016 in the UFAC campus Rio Branco. Photos by Edson Guilherme.

Branco (Parker et al. 1994, Robinson 1997).

As the preservation of the skin of Paint-billed Crake was not possible, its photograph (Fig. 2B) and the skin (AC 890) recently deposited in the UFAC ornithological collection, are the only documented evidence of its occurrence in Acre so far. This species is uncommon and locally resident in the region of Rio Branco, as in Peru (Schulenberg et al. 2007). Lack of records in this region may be due the typical low densities an occurrence in relatively inaccessible wetland habitats. Yet, records of *N. erythrops* have been made recently on the Interoceanic Highway in the department of Madre de Dios (Iberia) in Peru (Harvey et al. 2014), 260 km southwest of Rio Branco. Data available so far indicate that this species ranges from chaco ecosystems of northern Argentina, Paraguay and Bolivia, and western Brazil, northwards to the rainforests of the Madre de Dios region in Peru, and Acre and southern Amazonas state in Brazil (Brodkorb 1938, Remsen and Traylor 1983, Whittaker and Oren 1999, Guilherme 2001, Whittaker et al. 2002, Tubelis and Tomas 2003, Harvey et al. 2014, Cantador 2014, Guilherme 2016; Fig. 2A).

We also present here details and extend the discussion on the first documented specimen of *C. minuta* for Acre (Guilherme 2016) which represents the westernmost record for Brazil (Fig. 3A). The status of this species in Acre is still uncertain, although we suggest 2 alternatives: (a) the specimen discussed here is a vagrant, as the species is known to be able of flight long distances (Sanz et al. 2016), or (b), the species is expanding its range by colonizing deforested areas, as observed for other typically grassland species (Guilherme and Czaban 2015, Guilherme 2016).

Our records also confirm the occurrence of *P. flavirostris* in Acre (see Guilherme 2012, 2016). The closest records to these reported here are from the municipality of Canutama, in Amazonas state (Brazil), which is 530 km to the northeast, and Iberia in Peru, 252 km southwest of Rio Branco (Gyldenstolpe 1951, Harvey et al. 2014; Fig. 4B). Possibly, the scarcity of records from southwestern Amazonia may be related to the similarities between adult *P. flavirostris* and juvenile *P. martinicus*, leading to the misidentification, or because the species is either rare and/or occurs seasonally in the region (Parker 1982), which would reduce the chances of encounters. Remsen and Parker (1990) concluded that *P. flavirostris* is a migratory species within at least part of its range. Its occurrence in Acre in December and January is consistent with the records from other southwestern Amazonia areas (see Remsen and Parker 1990: fig. 2) and appears to coincide with the rainy season, as in Peru (Remsen and Parker 1990, Schulenberg et al. 2007). In this case, the status of this species in Acre would be that it is an austral migrant.

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Author's Contributions

EG, EAS, DLS and JSA recorded the species. RPM prepared skins and EG wrote the text.

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